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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/593,446	06/15/2000	Michael A. Gaynes	EN997170C	9250

7590 05/07/2002

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EXAMINER

VO, HAI

ART UNIT	PAPER NUMBER
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1771

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DATE MAILED: 05/07/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

T.D-3

Office Action Summary

Application No.

09/593,446

Applicant(s)

GAYNES ET AL.

Examiner

Hai Vo

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 28-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 28-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

Specification

1. The specification is objected to because the status of Patent Application Ser. No. 09/057,630 needs to be updated. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 28-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claim 1, line 6, the term "like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims 28 and 30 are rejected under 35 U.S.C. 102(b) as anticipated by Kunz (US 4,803,124) or Yoshida et al (US 5,187,123). Kunz discloses a method of bonding a semiconductor chip to a mounting surface by an adhesive (figures 5 and 6) wherein the bonding surface of the semiconductor is flat (column 4, lines 6-7) and the mounting surface being silver plating (column 5, line 47). Figure 6 of Kunz shows that the semiconductor chip has the surface area smaller than the mounting surface. The adhesive material is applied over the entire area of the semiconductor chip in a manner eliminating voids within the adhesive material (column 7, lines 58-61). Since Kunz is applying an adhesive having a starfish shape that is similar to the X pattern of the applicant adhesive onto the support surface, the adhesive in Kunz would inherently exhibit a wavelike undulating profile at the edges of the semiconductor chip surface when the mounting surface and the semiconductor chip are mated to each other. It is the examiner's position that Kunz anticipates the claimed subject matter.

Yoshida discloses a method of bonding a semiconductor chip to a lead frame pad by an adhesive wherein the semiconductor chip has the surface area smaller

than the led frame pad (figure 4). The adhesive material is applied over the entire area of the semiconductor chip in a manner eliminating voids within the adhesive material (abstract). Because the X arrangement of the adhesive spots in Yoshida on the led frame pad for contact with the bonding surface of the semiconductor chip (figures 10J and 10L) is similar to the X pattern of the applicant adhesive, a wavelike undulating profile at the edges of the semiconductor chip surface would be inherently present in the adhesive of Yoshida when the pad and the semiconductor chip are mated to each other. It is the examiner's position that Yoshida anticipates the claimed subject matter.

6. Claims 28 and 30 are rejected under 35 U.S.C. 102(e) as anticipated by Wolkowicz et al (US 5,886,763). Wolkowicz discloses a liquid crystal display heater using z-axis conductive adhesive to adhere the bus bars to the conductive indium tin oxide (ITO) layer (figure 2a, column 3, lines 65-66). Figures 2a and 2b show that the surface of bonding of the ITO layer and the bus bar are planar and the bus bar having a surface area smaller than the ITO layer. Wolkowicz is silent as to the void-free adhesive and a wavy profile at the edges of the bus bar surface when the bus bar and ITO layer are joined together. Since the LCD heater in Wolkowicz shows an absence of thermal stresses when the bus bar attached to a conductive film and meets the structural limitations as set forth in the claim, it is the examiner's position that the adhesive in Wolkowicz would be inherently void free and exhibit the same wavy profile at the edges of the bus bar

Art Unit: 1771

as the adhesive of the present application. It is the examiner's position that Wolkowicz anticipates the claimed subject matter.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kunz (US 4,803,124) or Yoshida et al (US 5,187,123) or Wolkowicz et al (US 5,886,763) as applied to claim 1 above, and further in view of Gilleo et al (US 5,531,942). The primary reference fails to specify the silver paste being a thermosetting adhesive. Gilleo discloses the silver epoxy and silver polyimide being thermosetting adhesives (column 3, lines 12-14). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used silver epoxy or silver polyimide as a thermosetting adhesive because they all are typical materials of the electroconductive thermosetting adhesives used commercially in the electronics industry.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (703) 605-


Art Unit: 1771

4426. The examiner can normally be reached on Monday to Friday, 8:30 to 5:00 (EAST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (703) 308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

HV
April 30, 2002


TERREL MORRIS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700